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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.	
09/772,986	01/31/2001	Hisao Hayashi	SON-2010	. 2637	
75	90 02/07/2003				
RADER, FISHMAN & GRAUER, P.L.L.C Suite 501 1233 20th Street, NW			EXAMINER		
			TRAN, THIEN F		
Washington, DC 20036			ART UNIT	PAPER NUMBER	
			2811		

Please find below and/or attached an Office communication concerning this application or proceeding.

Application No.   Applicant(s)   Application No.   Botton Summary   Examin r					NV.				
Period for Reply  A \$HORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MALING DATE OF THIS COMMUNICATION.  Extensions of time may be available under the previous of 37 CFR 1.13(b). In no event, however, may a reply be limitly filled.  If the period for reply specified above, the successment of 37 CFR 1.13(b), in no event, however, may a reply be limitly filled.  If the period for reply specified above, the successment attention previous will eaply and will eaply add will eaply a SCR (0) MONTHS from the maining bets of this communication in the period of the pe		Application No.		Applicant(s)					
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Priod for Repty  A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.  Edenticate or time may be available used the provisions of 3 CFR 1.136(a). In no awart, however, may a reply be timely flied.  Edenticate or time may be available used the provisions of 3 CFR 1.136(a). In no awart, however, may a reply be timely flied.  If the period for reply specified above it less than brinty (70) always, as reply within the statutory repriod will apply and will apply as 50 MONTH's from the mailing date of this communication.  Finally be reply within the set or extended period for reply will, by statutory period will apply and will apply as 50 MONTH's from the mailing date of this communication.  Finally be the period for reply specified above. The maintain statutory period will apply and will apply as 50 MONTH's from the mailing date of this communication.  Finally be reply within the set or extended period for reply will, by statutory period will apply and will apply as 50 MONTH's from the mailing date of this communication.  Finally be reply within the set or extended period for reply will. by statutory period will apply and will apply and will apply and will apply as 50 (3).  Finally be reply within the set or extended period for reply will. by statutory period will apply and will apply a will be considered timely.  This action is FINAL.  2b) This action is non-final.  3) Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under Ex parte Quayle, 1935 C.D. 11, 453 O.G. 213.  Disposition of Claims  4 S Claim(s)	Office Action Summary	Examin r		Art Unit					
Period of PREPLY A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION. Education of time may be available under the previous of 37 CFR 1.75(a). In no event, however, may a raply be timely filled. Education of time may be available under the previous of 37 CFR 1.75(a). In no event, however, may a raply be timely filled.  Education of the property of the provided above, the maximum statutory previous of apply within the situatory minimum of thirty (20) days will be considered timely.  If NO period for raply is specified above, the maximum statutory previous of apply and will expire 30 K (8) MONTH'S from the maximid guide of this communication.  Any reply received by the Offices at the finite membrane statutory and will expire 30 K (8) MONTH'S from the maximid guide of this communication, even if timely filled, may reduce 8 my available to reply signification is in condition for allowance except for formal matters, prosecution as to the merrits is closed in accordance with the practice under Ex parte Queyle, 1935 C.D. 11, 453 O.G. 213.  Disposition of Claims  4) Claim(s)			- t						
THE MAILING DATE OF THIS COMMUNICATION.  Estassions of time may be available under the provides of 3T CR 1.35(a). In on event, however, may a reply be timely filed after \$X. (§) MONTES from the evaluality acts of this communication.  It NO seads for reply in specified between the communication.  It NO seads for reply in specified between the maining date of this communication.  Falsue to reply within the set or extended profet for reply vill. by statutory period using apply and vill explice X(6) MONTES from the evaluation of the communication.  Falsue to reply within the set or extended profet for reply vill. by statutor, access the application to become ARAHDONED (35 U.S. C. § 133).  Any reply received by the official extrem the seminary into the form allowed profets and the communication, even if timely filed, may reduce any service and service		ears on in cover	SN TWITH THE	orr spona nc ac	iar ss				
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## **DETAILED ACTION**

## Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

Claims 1-8 and 13-16 are rejected under 35 U.S.C. 103(a) as being unpatentable over Hisao et al. (JP 10209467).

Hisao et al. discloses a display device (Fig. 6) comprising an insulating substrate 1; pixels 14 arranged in a matrix form; and thin film transistors 3 (Fig. 1) for driving said respective pixels, wherein said pixels and said thin film transistors are formed as integrated circuits on said insulating substrate, each of said thin film transistors has a bottom gate structure having a gate electrode 5, a gate insulating film 4 and a semiconductor thin film 2 stacked in the order from below upward, and said gate electrode is made of metallic material having a thickness of about 100 nm (assuming about 50 nm for layer 5a and about 50 nm for layer 5b are selected from the disclosed ranges). Hisao et al. discloses said gate electrode having a thickness of about 100 nm which allows for thickness slightly above or less than 100 nm. Therefore, the thickness of said gate electrode could be selected less than 100 nm. In the case where the claimed range "overlap or lie inside ranges disclosed by the prior art" a prima facie case of obviousness exists. In re Wertheim, 541 F.2d 257, 191 USPQ 90 (CCPA 1976); in re Woodruff, 919 F.2d 1575, 16 USPQ2d 1934 (Fed. Cir. 1990). Hisao et al. further

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discloses said gate insulating film 4 has a film thickness in the range of 100-200 nm. Assuming the thickness of 110 nm is selected from the disclosed range for the gate insulating film 4, and the thickness of less than 100 nm is selected from the disclosed range for the gate electrode (5a, 5b); then the thickness of the gate insulating film 4 is thicker than the thickness of the gate electrode.

Regarding claims 3 and 7, said semiconductor thin film 2 comprises polycrystalline silicon crystallized by an irradiation of a laser beam.

Regarding claims 4 and 8, said gate electrode has a multi-layer structure stacked with an upper layer 5a having comparatively low heat conductivity and high electric resistance, and a lower layer 5b having comparatively high heat conductivity and low electric resistance.

Regarding claims 14 and 16, Hisao et al. discloses the gate electrode having a thickness of about 100 nm but does not specifically disclose the thickness of the gate electrode being 90 nm. However, it would have been obvious to one having ordinary skill in the art at the time the invention was made to form the gate electrode having a thickness of 90 nm, since it has been held that where the general conditions of a claim are disclosed in the prior art, discovering the optimum or workable ranges involves only routine skill in the art. In re Aller, 105 USPQ 233. In re Daily, 93 USPQ 47 (CCPA 1966), the court held that changes in size and shape of parts of an invention in the absence of an unexpected result involve routine skill in the art. Additionally, In Gardner v. TEC Systems, Inc., 725 F.2d 1338, 220 USPQ 777 (Fed. Cir. 1984), cert. denied, 469 U.S. 830, 225 USPQ 232 (1984), the Federal Circuit held that where the only difference

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between the prior art and the claims was a recitation of relative dimensions of the claimed device and a device having the claimed relative dimensions would not perform differently than the prior art device, the claimed device was not patentably distinct from the prior art device.

## Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Thien F Tran whose telephone number is (703) 308-4108. The examiner can normally be reached on 8:30AM - 5:00PM Monday through Friday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Tom Thomas can be reached on (703) 308-2772. The fax phone numbers for the organization where this application or proceeding is assigned are (703) 872-9318 for regular communications and (703) 872-9319 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-0956.

February 6, 2003

Thien Tran
Patent Examiner
Technology Center 2800